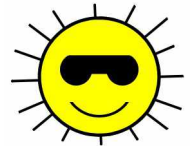


THE CMS TUMBLER

August
2020

Next Meeting:
Canceled.

This month remember
to wish a
Happy Birthday to



Clara Lancia on August 2
Michelle Unger on August 3
Stephany Viejo on August 5
Jennifer Gust on August 8
Jordan Cameron on August 10
Terri Cornell on August 13
Alex Lane on August 13
John Wright on August 14
Robert Hagstrom on August 17
Ronnie Rose Stearns on August 17
Steve Sorkness on August 22
Michael Stevenson on August 22
Robert Wahlberg on August 23
Paul Stewart on August 27

and also remember
to wish a

Happy Anniversary to
Bill & Jody Flores on August 4
Jonathan & Mrs. Fraser on August 8
Isaac & Merriann Fu on August 9
David & Annette Orme on August 27 (43 years)

Connect with us!

Website: cascademineralogicalsociety.org
Club Facebook: facebook.com/CasMinSoc/
Show Facebook: facebook.com/cascadegemandmineralshow
Instagram: instagram.com/cascadegemandmineralshow/



Except where otherwise noted, material from The Tumbler may be reprinted for non-commercial purposes, provided that the author(s) and source are acknowledged.

For commercial use, the author(s) must be contacted for permission; if no contact information is given, contact them via the editor.

Tips, suggestions, recipes and experiments printed in this newsletter are the experiences and/or opinions of the individuals submitting them. We are not responsible for their authenticity, safety, or reliability. Caution and safety should always be practiced when trying out any new idea.

The monthly newsletter of the Cascade Mineralogical Society, Inc., Kent, Washington

CMS Club Address
25838 W LK Wilderness Dr. SE.
Maple Valley, WA. 98038

Keith Alan Morgan, Editor
3802 W Tapps Dr. E
Lake Tapps, WA 98391

Postal, or Email, Exchange
Bulletins are welcome.
Email preferred.
greenrockdraggin@yahoo.com

2020 Elected Officers

<i>Title</i>	<i>Name</i>	<i>Phone</i>	<i>E-mail</i>
President	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Vice President	Merriann Fu	253-236-5593	merriannf@gmail.com
Treasurer	Charles Benedict	425-306-0465	charlesbenedict@comcast.net
Secretary	Pete Williams	425-228-5063	petewill02@gmail.com
Director	Roger Pullen	206-387-3214	None
Director	Roger Danneman	425-228-8781	roger.danneman@q.com
Director	Richard Russell	253-736-3693	richru1@yahoo.com
Past President	Bob Pattie	425-226-3154	bobpattie@comcast.net
Show Chairman	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Federation Representative	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Federation Representative	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Mineral Council	Bob Pattie	425-226-3154	bobpattie@comcast.net
Mineral Council	Jacquie Pattie	425-226-3154	dianahorsfall@comcast.net

2020 Show Committee Chairs

Cascade Show	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Cascade Show	Co-Chair		
Cascade Show	Treasurer Pete Williams	425-228-5063	petewill02@gmail.com
Cascade Show	Silent Auction Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show	Raffle Donations Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show	Demonstrators Richard Russell	253-736-3693	richru1@yahoo.com

2020 Committee Chairs

Club Historian			
Donations	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Field Trip	Roger Danneman	425-228-8781	roger.danneman@gmail.com
Health & Welfare	Bev Williams	425-228-5063	britbev1957@outlook.com
Library	Bob Pattie	425-226-3154	bobpattie@comcast.net
Meeting Programs	Miriann Fu	253-236-5593	merriannf@gmail.com
Membership	Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org
Newsletter - Tumbler Editor	Keith Alan Morgan	253-862-8201	greenrockdraggin@yahoo.com
Open Shop	Instructors Bob Pattie	425-226-3154	bobpattie@comcast.net
Public Relations	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Refreshment	Angie Bayer	253-631-3840	angiemc61@msn.net
Raffle/Display	Roger Pullen	206-387-3214	None
Shop Operations	Bob Pattie	425-226-3154	bobpattie@comcast.net
Show & Tell	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Social Media	Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Webmaster	Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org

2020 CMS Dues are \$25 per year per family

Pay online, by mail, or at our meetings.

Mailing Address: Charles Benedict, 25838 W Lk Wilderness Dr SE, Maple Valley WA 98038

You can pay your dues via credit card!! We now accept all cards through our website or at the meeting.

You can renew your membership or enroll as a new member and pay your dues all in one shot online. You will find it under the "Membership" tab on our website. <http://www.cascademineralogicalsociety.org>

The object of the Society shall be to stimulate interest in the study of the earth sciences, lapidary arts and related subjects.

This Society is affiliated with the American Federation of Mineralogical Societies; the Northwest Federation of Mineralogical Societies; and the Washington State Mineral Council.

Every member of the club should be receiving a copy of the Northwest Newsletter. If you are not receiving a copy contact Mike Blanton in person or by telephone at (425) 271 -8757 or by computer at mblanton41@hotmail.com

To get information to the Tumbler via the Internet send it to greenrockdraggin@yahoo.com Please put Tumbler and subject in the Subject Line. The deadline is the 20th of each month.

August

Sun	Mon	Tue	Wed	Thur	Fri	Sat	
	The annual picnic has been canceled!						1
2	3	4	5	6	7 Puyallup Show	8 Puyallup Show	
9 Puyallup Show	10	11	12	13	14	15 Shelton Rock Sale	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30	31						

CMS Show Committee Meeting:...Canceled
 CMS Board Meeting:.....Canceled
 CMS General Meeting:.....Canceled

Lapidary Class Hours:.....By appointment, call to set a time & day for your lesson (425) 226-3154
 Lapidary Shop Hours:.....Most Tuesdays..... 2:00 pm to 5:00 p, call ahead (425) 226-3154
 Lapidary Shop Hours:.....3rd Saturday..... by appointment only (call a few days ahead to set time)

More Field Trip info can be found on Page 11
 More Show info can be found on Page 12



The Tumbler has received One-Time Rights to publish this cartoon

CMS Board Meeting Minutes July 6, 2020

Meeting canceled.

CMS General Meeting Minutes July 9, 2020

Meeting canceled.

Our Club is a Member of these Federations and Associations:

AFMS: The AFMS governs our Northwest Federation.

You can find the most current association news at <http://amfed.org/news/default.htm>

NFMS: The Northwest Federation is our home federation. To keep up on the goings on in our own backyard you can find the most current news bulletins at <http://northwestfederation.org/Newsletters.asp>

Check the current May-June issue. On page 3 read Beth Heesacker's "A Season of Hope" and Larry Hulstrom's "Cheer for Strange Times". In fact, the entire newsletter has some very encouraging messages for dealings with the present day isolation order.

ALAA: The American Lands Access Association, Inc. represents the rockhounding interests of 325 gem & mineral clubs/societies in 47 States and the District of Columbia. The purpose of the association is to promote and ensure the rights of amateur fossil and mineral collecting, recreational prospecting and mining. The use of public and private lands for educational and recreational purposes. They also carry the voice of all amateur collectors and hobbyists to our elected officials, government regulators and public land managers.

August 25, 2020 Free Fee Day at National Parks and Monuments

ALAA also publishes a quarterly newsletter. To keep up on the news and lobby efforts on our behalf check out <http://amlands.org/>

Washington State Mineral Council: The Washington State Mineral Council is dedicated to the location and conservation of rock and mineral sites of interest to the rockhounds of Washington state.

You can find a database of local rock and gems shows and field trips. It's a great resource if you want to plan on outing.

Their monthly field trips are on again. So take advantage of these great outdoor rockhounding adventures!

Also check out "Misc. News" for all the latest updates on collecting sites around Washington.

<https://mineralcouncil.wordpress.com/news-updates/>

They also have a monthly news bulletin that keeps you informed of everything the State and Federal governments wants or are doing to the rockhounding areas in the northwest.

You can find all this information and a whole lot more about what is happening in our state at

<https://mineralcouncil.wordpress.com/>

Wow, There Is A Local Rock Show In August!

There is a small 3-day rock show being put on by the Puyallup Valley Gem Club.

This is NOT their regular location at Swiss Park, Bonney Lake.

Show Date and Times

Friday, August 7th, Saturday, August 8th & Sunday, August 9th, 2020

Outdoors under picnic area cover and in grass area among the trees.

10am To 6pm Daily

The Tacoma Sportsmen's Club

16409 Canyon Road East, Puyallup, WA

No Admission Fee

FREE Parking

Young Richard's Almanac by Dick Morgan

In these days of the pandemic, more people tend to be more social, saying hi and wishing others the best while warning them of symptoms.

The lock down is interrupting normal lifestyles, eliminating hugs, handshakes and pats on the back which have been greetings used over centuries of civilization and this coupled with school closures which eliminates students to pursue their ability to interact with peers and classmates, if this is allowed to continue can have a very adverse affect on the future of Americans of all ages. It would be nice to be able to return to our normal lifestyles.

From the Top of the Rock Pile... by Kat Koch, CMS President

The bad news, again no meeting in August. Very sorry we have had to cancel our annual picnic at the Lake Wilderness Arboretum. I am so hopeful that in the near future we will be able to have a meeting.

I really miss seeing everyone.

Our monthly field trips are continuing. There nothing like getting our doors and collecting rocks. Our state is so beautiful and summer has arrived! Check our website and register for field trip reminders or new field trips. Also check out the Washington Mineral Council for their trips too.

Also check our our website for the latest Mini Miner's by Diamond Dan for activities to keep our Young Tumbler's busy. The June and July editions are now available. We thank Diamond Dan for providing the issues for free for our Young Tumblers.

The Puyallup club is holding a small 3-day outdoor show in August. You will find all the details elsewhere in this newsletter.

I guess that's all the news. Mike has been busy tumbling, He always brings his latest polished rocks up to the kitchen to show me. I have been gardening. My small back patio is full of colorful flowers and a water fountain plus I am growing tomatoes and green beans. So far I have 9 tomatoes getting ripe and my beans are blossoming.

I hope everyone is staying healthy. Be sure to wear a face mask when going out as we all want to see each other again.



Mima Mounds, Thurston County, Washington by Kat Koch

The Great Pyramids of the Gophers: Mima Mounds Mystery Solved?

The Mima Mounds Natural Area Preserve is located south of Olympia.

Capt. Charles Wilkes, leader of the U.S. Exploring Expedition that charted the Northwest, discovered them 1841. The name came from the Native Indians' name for the area where they are found, Mima Prairie. It's 637 acres of mounds ranging in sizes up to 8 ft tall and 30 ft wide. The area is a grassland prairie with the mounds packed like eggs in a carton. They are composed of loose, unstratified, often gravelly sediment that is on base of topsoil comprised of minerals with organic matter incorporated.

There have been many theories on how they were created. Glacial freeze-and-thaw cycles, erosion, the interplay between wind and vegetation, Indian burial mounds, gophers, earthquakes, tsunamis, volcanic eruption and even extra-terrestrial creations. They have never found any evidence of Indian burials. Some scientists suggest these soft-soil mounds came from sediment deposits where water wound it's way around vegetation.

Scientists have extensively researched all the theories but only one seems to hold up. Recent research suggest burrowing pocket gophers, over many gopher generations, created these mounds nearly 700 years ago. Pocket gophers push the soil upward towards the surface when burrowing unlike other species of gophers that push the soil down further into their burrows. Manny Gabet, Geologist from San Jose State University, San Jose, California created a computer model of virtual pocket gophers with the unique soil conditions of the Mima mound site. A critical puzzle piece of Gabet's computer model was a shallow buried layer that was impenetrable to water, which is found at Mima mounds. According to the computer model, eventually the burrowing mammals run out of soil and the Mima mounds were then fully "developed" — which the computer model says it took 500 to 700 years.

"The problem with figuring out how Mima mounds form is that nobody has actually seen one form, which suggests that the processes that formed them are either no longer active or just very, very slow," Gabet said. "The advantage of using a computer model is you can speed up time."



According to Gabet, the size of each mature Mima mound roughly matches the territorial range of a single pocket gopher. A single pocket gopher adds a bit of soil, pebbles or dead plants to each mound over many generations — the animals are fiercely territorial.



Gabet published his theory in the journal *Geomorphology*, October 3, 2013.

"Though the study isn't proof that gophers create Mima mounds, it does show that it's possible. We don't have a smoking gun, but it's a very nice paper and it lends support to the hypothesis that it's feasible for pocket gophers to move the amount of material to make the size and shape of the mounds that are there," " said Ronald Sletten, a soil scientist at the University of Washington who has studied the state's Mima mounds.

Sletten and his UW colleague Bernard Hallet have analyzed carbon fragments in the Washington Mima mounds, concluding the Washington fields are at least several thousand years old.

Bibliography: Atlas Obscura, Culture Trip, Live Science, US Dept of Agriculture: Soil, Wikipedia, Washington State Dept of Natural Resources.

Ancient Newspapers by Kat Koch
Newspapers are the Magical Stuff of History.

Above Quote, Author Unknown

Newspaper Rock

Newspaper Rock (State Historic Monument) is located just outside the Needles District of Canyonlands National Park, Utah. It's a 200 square foot rock covered with hundreds petroglyphs depicting a mixture of human, animal, material plus abstract forms. It is one of the largest display of glyphs, all in one place, in the USA. The rock is part of the Wingate sandstone cliffs at the upper end of Indian Creek Canyon.

The glyphs are etched into the dark coating on the rocks. The dark hard coating or patina is called "desert varnish." It is comprised of a blackish Manganese-iron deposit that gradually forms on exposed sandstone from rainfall and bacteria.

The petroglyphs are of various ages.

The older images are faded and have various degrees patina to them. Note the glyph of the warrior on the horse. This was added after horses were introduced to North America in the 16th century.

The oldest glyphs are around 2,000 years old. They were made by Archaic, Anasazi, Fremont, Navajo, Anglo, and Pueblo cultures. There are over 650 glyphs on just this rock. The glyphs depict everything from riders on horses to events just like a newspaper.



Another Site: The Oldest Petroglyphs in North America

The petroglyphs found at Pyramid Lake, Nevada are within the Paiute Reservation. They have been dated by several methods including the water level of Lake Winnemucca through out geological time. The actual true date of the carvings is not known but it is estimated to be between 10,500 and 14,800 years ago. To this day the Paiute Indians hold the Lake Winnemucca Basin and the carved stones scared.

The rock carvings are done on a pile of limestone boulders. The art is depictions of nature and geometrical symbols. Some carvings seem to depict clouds, lightning, fish scales, trees and unknown symbols. Researchers have yet to identify who the ancient people were that created the glyphs or their exact meaning.

According to researchers, "We initially thought people 12,000 or 10,000 years ago were primitive, but their artistic expressions and technological expertise associated with these carvings paints a much different picture."

The difference between petroglyphs and hieroglyphs: Hieroglyphs is a structures writing systems. Petroglyphs are rock carvings depicting pictures of events, animals, fauna and etc. made in prehistorical times.

Bibliography: USGS, Wikipedia, Visit Utah, NPR, Archaeology Magazine, Science News, Institute for Creative Research, Smithsonian Magazine.



Marlekor or Imatra Stones by Lawrence H. Skelton, Geologist

Imatra stones, which owe their name to the Imatra cascade on the Vuoska River in Finland, are unique concretions which exhibit bizarre shapes. They inevitably occur within glacially deposited sediments including marl, loess, and clay deposits. Depending on location, the name varies: nackebrod in Sweden, fairy stones (Scotland), lossmannchen, losskindel, or lossputten (Germany) and mud babies or clay dogs in Connecticut. A name often found in geology texts is marlekor stones, a Swedish term meaning "marl cows."

Marlekor were first noted in the United States in 1670 in clay beds along the Kennebec River in Maine. John Winthrop, Jr. then Governor of the Connecticut Colony and elected Fellow of the Royal Society described what may be the Maine marlekor and sent specimens to Lord William Brereton in England.

A concretion as defined in the AGI Dictionary of Geological Terms is: "A nodular or irregular concentration of certain authigenic [generated on the spot] constituents of sedimentary rocks; developed by the localized deposition of material from solution, generally about a central nucleus. Harder than the enclosing rock." Marlekor seem to differ from the definition in that they generally lack a central nucleus, a finding first reported by Raphael Liesegang, a German colloid chemist. However, marlekor formed around fish remains have been found in glacially deposited clays in Greenland and Norway and the late W. C. Palmer, an amateur mineralogist of Milford, Connecticut told the author that marlekor collected from the Connecticut River Valley occasionally have organic particles in their centers.

Chemical analyses of Connecticut River Valley marlekor show them to range from 42% to 57% calcium carbonate (calcite), figures which correspond to earlier German analyses which ranged from 40% to 66% calcite. These figures agree with findings of W. A. Tarr and W. H. Twenhofel that calcite is the chief material composing those concretions found in shale, claystone, loess and sandstone. The remainder of the concretion consists of silt and clay or sand particles cemented by the calcite.

Marlekor are found throughout the world; in North America in addition to the Connecticut River Valley, they occur in selected clay pits in northern New Jersey, along the shores of the Harricane River at Abitibi, Quebec, along the Skykomish River, Washington and on the south shores of Lake Superior. They are said to occur in some location in Nebraska although this has not been confirmed. In Asia, marlekor have been reported in loess deposits in China and in glacial lake sediments along the Chukotka River in northeastern Siberia. In Europe, they occur in glacial polar sea clays in harbors of Greenland and Norway.

Interestingly, these marlekor contain an organic core, remains of the fish *Mallotus*. Marlekor occur at several sites in Argentina: Pleistocene age concretions are found at Lago Ghio in Patagonia and in the Caluhaqui Valley in Salta, northwestern Argentina where they occur in clays deposited in intermontane lakes. The clays probably were formed by mountain glaciers abrading bedrock.

An interesting and unusual marlekor-bearing site is in north-western San Luis province in west-central Argentina. As elsewhere in the world, the marlekor concretions are in glacio-lacustrine clay and silt beds (Pullero member of the Bajo de Veliz Formation) but in this location, the beds are of Permian (Sarmatian) age, about 282 million to 269 million years old, a time range confirmed by fossil pollen and spore analysis. (Strata of the same age are present in Kansas: the Wellington and Ninnescah Formations in Sedgwick County being local examples. The Permian sea was shrinking locally (as shown by the presence of the Hutchinson Salt and red beds of south-central Kansas) because of continental glaciation in southern Gondwana (which included present South America.) Marlekor have been reported also in India (another site for Permian glaciers) and in loess deposits in China. The German-language names (above) indicate that they occur in Germany. Marlekor may be found in the glacial clay deposits along the Rakaia River on the South Island of New Zealand. Indeed, they may be expected to occur in any glacier-sourced, freshwater deposited clay or silt.

How are these oddly-shaped concretions formed? A vast majority of marlekor are cemented by crystallization of calcite (CaCO_3) but a few are cemented by oxides of iron, aluminum or manganese. The calcite originates in glacial debris gathered from bedrock scoured by moving ice. The marlekor concretions are distinctive according to their locality. They are concentrated in random varves (seasonal layers) and W.A. Tarr considered that varves deposited in warmer weather (summer) would contain a greater abundance of concretions than their winter counterparts. Cold winter water holds greater amounts of carbon dioxide (CO_2) than warmer water. When summer arrived, the warmer waters lost CO_2 which, reacting with calcium, caused precipitation of the calcite. In summer, the upper layers of water reach the saturation point of calcite and crystallization and concretion formation takes place in the shallow upper layers where silt and sand particles of sediment are coarser. Quirke compared contents in the zone of concretion formation to "slip," the fluid clay used by ceramicists. That would explain the sometimes flowing shapes of the marlekor. Evidence for shallow water is present in the form of ripple marks where marlekor often are concentrated.

During winter, the smallest suspended particles settle out and form a fine-grained varve which seals the summer layer. This process continues annually and provides a method of dating such lake sediments by counting the seasonal varves. Whether concretions form depends on water temperature and CO_2 concentration. Since weather is not a constant, marlekor presence is not confined to regular warm-weather varves but is random in vertical extent. Dissolved calcite is carried by groundwater through the coarser sediments. The flow is not constant but waxes and wanes which explains the concentric forms of many marlekor. Since the porous summer varves sit on impervious winter sediments, the concretions are flat on the bottom.

Depending on the distance between adjacent concretions and the concentration of dissolved calcite in the groundwater, the concretions may grow toward each other and coalesce making ovals or dumbbell shapes or forms with various projections. Any projections are usually in the same plane as the rest of the concretion although occasionally, "warts" are formed on the upper surface but remain within the surrounding sediment. Since the concretions form in each year's top layer, they are contemporaneous with the forming of that layer and stratification lines continue from the

surrounding sediment through the concretion which forms in the more porous spots.

The similar isolated concretions occurring in loess form in a similar manner. Loess is non-stratified, formed principally of silt-sized particles and may occur in quite thick beds. Groundwater moving downward from the surface toward the water table, becomes saturated with CaCO₃ from the silt particles. As it passes thru more porous zones within the loess, the calcite precipitates and cements loess particles together into rounded or very irregularly shaped concretions. The descending water, less some calcite content, continues downward to the water table. Such concretions are referred to in China as "stone ginger" (from the shape of a ginger root) in and as "muñequitas de tosca" or "tosquillas" in Argentina respectively meaning "clumsy little dolls" or "little clumsies."

Concretions in general are fascinating artifacts of nature. Marlekor are in many aspects the most intriguing of all and have interested people of all callings. The Russian composer, Peter Tchaikovsky, kept a handful on top of his desk. Who knows what chords were inspired by his viewing of them?

Recommended reading

Bassler, R. L., 1935. "Concretions – Freaks in Stone" in *Smithsonian Report for 1935*, pp. 321 – 326.

Quirke, T. T., 1917. *Espanola District, Ontario: PhD dissertation, University of Chicago, reprinted by Canadian Department of Mines, Geological Survey, Memoir 102.*

Sheldon, J. M. A., 1900. *Concretions from the Champlain Clay of the Connecticut Valley: Boston, The University Press, John Wilson & Sons.*

Tarr, W. A., 1935. "Concretions in the Champlain Valley Formation of the Connecticut River Valley": *Geological Society of America, Bulletin Vol. 46*, pp. 1493 – 1534.

Twenhofel, W. H., 1932. *Treatise on Sedimentation: Baltimore, Williams & Wilkins Company, 926p.*

via Rockhound Rambling, 4/20; from Quarry Quips, 12/10

Understanding Commercial Granite by Andrew Alden

Stone dealers lump a wide variety of rock types under the broad category called "granite." Commercial granite is any crystalline rock that is harder than marble with large mineral grains. Let's unpack that statement:

Crystalline Rock--Crystalline rock is a rock that consists of mineral grains that are tightly intergrown and locked together, making a tough, impervious surface. Crystalline rocks are made of grains that have grown together at high temperature and pressure, rather than being made of existing sediment grains that have been cemented together under gentler conditions. That is, they are igneous or metamorphic rocks rather than sedimentary rocks. This differentiates commercial granite from commercial sandstone and limestone.

Comparison to Marble--Marble is crystalline and metamorphic, but it consists largely of the soft mineral calcite (hardness 3 on the Mohs scale). Granite instead consists of much harder minerals, mostly feldspar and quartz (Mohs hardness 6 and 7 respectively). This differentiates commercial granite from commercial marble and travertine.

Commercial Granite Versus True Granite--Commercial granite has its minerals in large, visible grains (hence the name "granite"). This differentiates it from commercial slate, greenstone, and basalt in which the mineral grains are microscopic.

To geologists, true granite is a far more specific rock type. Yes, it is crystalline, hard, and has visible grains. But beyond that, it is a plutonic igneous rock, formed at great depths from an original fluid and not from the metamorphism of another rock. Its light-colored minerals consist of 20% to 60% quartz, and its feldspar content is no less than 35% alkali feldspar and no more than 65% plagioclase feldspar. Other than that it can contain any amount (up to 90%) of dark minerals such as biotite, hornblende, and pyroxene. This differentiates granite from diorite, gabbro, granodiorite, anorthosite, andesite, pyroxenite, syenite, gneiss, and schist, but all of these excluded rock types can be sold as commercial granite.

The important thing about commercial granite is that whatever its mineral composition, it is rugged (suitable for hard use, takes a good polish and resists scratches and acids) and attractive with its granular texture.

Natural Stone--This family of countertop materials includes quarried stones like granite, marble, soapstone, and slate.

Granite-- once found only in expensive homes, granite is more common today and is one of the most popular materials. Granite comes in a wide array of colors: vibrant blues and variegated browns, to midnight black, deep red and mottled white.

- Pros: no (or low) visible seams, durable surface, heat-resistant
- Cons: must be sealed to resist stains, expensive

Marble-- This high-end natural stone comes in fewer color patterns than granite, and is also softer. It's a good work surface for activities like baking or making fresh pasta, but may show knife scars, and take care with acidic foods like citrus.

- Pros: durable, striking natural patterns
- Cons: high-maintenance, needs repeated sealing, expensive

Soapstone and slate are more exotic materials and each have their upsides and downsides. Both are both non-porous, so they won't need sealing, but soapstone is soft and may show knife marks, while slate can be brittle, especially at corners. Both come in fewer colors.

Other choices for countertops are:

- engineered stone made mostly of quartz
- Concrete

- Solid surfaces made from a dense acrylic, polyester, or blend of the two
- Plastic Laminate.

from Boulder Buster, 2/20

The Earth Is One Gigantic Novel, Just Waiting to Be Read

The earth is one gigantic and fascinating novel if we know how to read it. Within its great story, filled with so many mysteries yet to be discovered and treasures to be found, the earth even holds knowledge beyond our current beliefs of what once was and what can be. And there is an endless beauty in those rocks we love so much, isn't there? I find it so enchanting working with a stone to discover what beauty it holds that can't always be seen from the outside. Aren't we the lucky ones to have fallen in love with the hobby of the Earth Sciences, and the Lapidary Arts and Crafts.

I imagine many of us have been more focused on making homemade face masks instead of grab bags so far this year, but we can still have fun getting ready for what we love and enjoy, with those we want to be close with again within our dear hobby. I am daydreaming of the day when that will happen, and it will happen. Just think of all the wonderful society "show and tell" programs we'll have once we can get together again.

I love making obsidian beads, but never tumbled the rough I've collected, so I have that in the works. There are always cool ties to make in preparation for the hot summer field trips and for working in the garden, to give away. I have yards of grab bag fabric with a frog and toad print that are fun to make right now, in preparation for when the shows start again and when we can get together with the kids of friends. This time of being separated from people except by phone and computer has offered me the space and time to think about what new adventures I'd like to explore and create related to the hobby, and I am finding there are many.

A company that specializes in carving New Zealand jade came up with a beautiful idea of offering two pendants cut, carved and polished from the same stone, so two people who can't be together right now because of the social distancing, can feel still feel a closeness by wearing a stone cut from the same piece of jade. It gave new meaning to how we can look at a slab, apart from just to seeing how many good cabs we can squeeze out of the piece.

Earth Science Historical Spotlights: Did you know, it was the mining and mineral companies who developed the N95 mask which has been so important to protect our frontline workers from the Covid-19 virus? Here's a great link to more information about it. <https://www.fastcompany.com/90479846/the-untold-origin-story-of-the-n95-mask>

Did you know, that a key ingredient in the coronavirus tests is found in the hydrothermal waters at Yellowstone National Park and Lassen Volcanic National Park? Here's a link to explain it more. <https://www.who.edu/news-insights/content/finding-answers-in-the-ocean/>

After WWII, memberships in rock and gem societies grew exponentially. This surge in interest included numerous new societies forming across the United States, followed by the formation of the American Federation of Mineralogical Societies. Those returning home from the war found solace in Recreational Rockhounding. They found a joy in the hobby and it helped heal their minds from war. The recreation was an ideal match for something the whole family could have fun with as well as being educational, as it is today. We are living in unusual times this year, brought on by the Covid-19 virus, which is challenging us all in so many ways. Americans have always been strong in their spirit, and a beautiful spirit it is. We will get through this, and everything will be all right, and I look forward to the time we can all be together again.

from AFMS Newsletter, 6/20

Have You Thought About Your Collection Lately?

I bought a dead man's rock collection the other day and as I was sorting the rocks, the thought came to me, "Who is going to pick over my rock collection?"

Every rock hound has a rock collection, some quite valuable. All of us have at least one rock or mineral or gemstone that we would like for someone to have someday. But how are you going to be sure that someone gets it after you are gone?

Of course, you could give it to them before you die, but that would deprive you of the pleasure of possession and display and, as you don't know just when you will die, you might be without your collection for quite some time.

Perhaps a few pieces should be given away, but it would seem reasonable that the bulk of your collection should remain in your possession as long as it gives you pleasure. You should leave written instruction regarding the disposition of your collection, even incorporating it as a part of your will.

Perhaps the bulk of your collection should be sold, in which case arrangements should be made with a trusted rock dealer to supervise the sale or even to buy the entire lot.

In case you have some valuable pieces, it might be advisable to consult your attorney and accountant. Is your will up to date? Who is going to pick over your rock collection?

via Pick & Shovel, 7/20; from Pick & Shovel, 2/73

There was a man who liked rocks but always stored them in the attic. His wife one day said, "What good are those rocks doing up in the attic?" He replied, "When I leave this earth and go to heaven, on my way up, I'm going to take them with me." One day he died. His wife went up to the attic to see. They were all there. She said, "That's what I thought; he must have gone the other way."

via Pick & Shovel, Spring/20; via Pick & Shovel, 5/81; from The Template, 2/81

Young Tumblers News

Old Time Crystal Garden by Kat Koch, Cascade Mineralogical Society, Kent, WA

During the Great Depression of the early 1930's children use to make Crystal Gardens. They were inexpensive to make and also kept the children busy creating beautiful crystals. At the time they were called "Depression Gardens."

I found the following tucked away in my mother's papers after she passed away many years ago. My older sister was a young child at the end of the depression and I assumed she made these crystals with her. I thought this was a good time to resurrect this activity idea.

If you make these crystals send me an email with a picture of your Crystal Garden and I will post it on the club website and Facebook page!

Talking kat 2 at yahoo dot com

Have an adult supervise you at all times when making these crystal gardens.

What You'll Need:

Chunks of coal or charcoal are best, brick, flower pot pieces or pieces of unglazed porcelain. Anything porous will work.

Old shallow dish or bowl approximately 6" wide

Glass mixing bowl

Water

Ammonia

Mrs. Stewart's Liquid Bluing. Can be found in laundry soap section of the market.

Salt (plain, not iodized)

Food coloring in several colors

Break coal, brick, clay flower pots or unglazed porcelain into chunks smaller than a ping-pong ball or about the size of a walnut.

Place pieces several in an old dish, clustering them near the center. Don't overcrowd the dish.

For each dish, mix in a glass bowl:

4 tablespoons of water

1 tablespoon of household ammonia. Remember to be careful when pouring ammonia.

4 tablespoons of liquid bluing

4 tablespoons of non-iodized salt

Pour the mixture very slowly over the broken pieces in your dish.

Drip food coloring on the pieces sticking up out of the solution.

Set the bowl aside in a place where it won't be disturbed. A dry place with air circulation. In a few hours you should see crystals forming or growing in your garden.

If you use a larger bowl with more broken pieces or coal you can keep adding solution and food coloring drops. The crystals will keep growing.

To make crystal blossoms: Make a larger batch of the solution given above but leave out the ammonia. Make enough to completely cover the broken pieces in the dish. Be sure to keep the pile low, under the rim of the dish.

Add more solution every day or two to keep the same liquid level. After two weeks stop adding solution and allow the liquid to evaporate completely. Beautiful blossom shapes will form.



Hogbacks

Do you know what a hogback (sometimes called hogsback) is? It is actually a geologic term describing a narrow ridge with steep slopes of nearly equal inclination on both flanks. Typically the term is restricted to a ridge created by the differential erosion of outcropping, steeply dipping, sedimentary strata.

from Delvings, 7/20

Sodalite by Leslie A. Malakowsky

Sodalite is sometimes referred to as the "poor man's lapis" because its blue color is similar to that of lapis lazuli, but Sodalite rarely contains pyrite (a common component of lapis) and it is much less expensive than lapis.

A couple other distinguishing properties of Sodalite is its white, rather than blue streak and that under ultraviolet light Sodalite fluoresces a distinguishing orange color.

via Rockhounds Herald, 6/18; from Rocket City Rocks & Gems, 5/18

Field Trips

The club or clubs sponsoring the field trips are shown in italics. When known I have listed a phone number and contact person for each sponsoring club below the listed trips. If you are not a member of the sponsoring club, you should phone and ask permission to go on their field trip.

Information from the Washington State Mineral Council webpage (<http://www.mineralcouncil.org>).

August 15-16 *Puyallup Valley Gem & Mineral Club - Greenwater* (Saturday BBQ) – Meet at the Enumclaw Ranger St. before 9 am - Agate, Jasper, Opal & Wood – Bring digging & light hard rock tools
Dennis Bachchelor (360) 870-8741

Lagerstätte by Steve Mulqueen

A Lagerstätte is a type of fossil deposit that occurs in a sedimentary rock unit in which the organisms are preserved with an exceptional degree of detail. The term Lagerstätte is a combination of two German words meaning “place of storage” and has been adopted into the English scientific language. These deposits are rare because the physical and chemical environments, from deposition, deep burial and on to the present day, were beneficial to maintaining physiological details of the animal.

Lagerstätte fossil sites are recognized for their abundance of fossils in an exceptional degree of preservation.

There are 10 Lagerstätte sites in North America:

Pioche Shale, Cambrian Period (525 mya – 520 mya*), Nevada/Utah

Wheeler Shale, Cambrian Period (504 mya), Utah (House Range)

Burgess Shale, Cambrian Period (508 mya), British Columbia

Mazon Creek, Carboniferous Period (310 mya), Illinois

Cleveland-Lloyd, Jurassic Period (150 mya), Utah (Dinosaur Quarry)

Green River Formation, Eocene Epoch (50 mya), Colorado, Utah, Wyoming

Dominican Amber, Oligocene/Miocene epochs (30 mya – 10 mya), Dominican Republic

Barstow Formation, Miocene Epoch (19 kya – 13.4 kya**), California

Mammoth Site, Pleistocene Epoch (26 kya), South Dakota

Rancho La Brea, Pleistocene Epoch (40 kya – 12 kya), California

*mya = Million years ago

**kya = Thousand years ago

There are two types of Lagerstätte fossil deposits:

1. Konzentrat-Lagerstätten (concentration Lagerstätten) – The natural occurrence of a large concentration of exceptional fossils within a sedimentary deposit (quantity over quality)

2. Konservat-Lagerstätten (conservation Lagerstätten) – The natural occurrence of exceptionally detailed features within the fossils as a direct result of unusual conditions involved in the deposition, fossilization, and continued preservation of the animal remains (quality over quantity)

One of the best examples of a Konservat-Lagerstätte is the Burgess Shale of British Columbia, Canada. The Burgess Shale contains a huge assemblage of fossils representing the Middle Cambrian (508 million years old) that were deposited and preserved during the Cambrian explosion of life. Many of the fossils in the Burgess Shale were of soft-bodied marine animals.

The preservation of fine features is unusual because the soft tissues can easily decompose or be damaged before, during and after the deposition of sediment. The Burgess Shale can be characterized as both a Konzentrat-Lagerstätten and Konservat-Lagerstätten due to the abundance of fossils and the preservation of detail.

Conclusion: Lagerstätte fossil sites are important to paleontologists because they offer a more complete record of ancient biodiversity, animal behavior and paleoecology, especially regarding aquatic communities.

Data Sources: Reference the following keywords and terms on the Internet: Lagerstätte, Konzentrat-Logenstatten, Konservat-Logerstatten, fossil preservation, Cambrian explosion, biodiversity, paleoecology, taphonomy and the fossil deposits listed in this article.

from Rockhound Rambling, 7/20

Recipe For A Friendly Club

- 1) Speak to people even if you do not know them or their names.
- 2) Smile at people.
- 3) Call people by name.
- 4) Be friendly and helpful (if you would have friends, be one).
- 5) Be generous with praise (and cautious with criticism).
- 6) Be considerate of the feelings of others.
- 7) Be alert to give service (what we do for others counts most in life).
- 8) Add to this a good sense of humor, a generous dose of patience, and a dash of humility.

via Pick & Shovel, Spring/20; from The Pick & Shovel, 5/81

Shows

August 7 - 9: Friday, Saturday, & Sunday 10 am – 6 pm

Puyallup Valley Gem Club

Outdoors under picnic area cover and in grass area among the trees.

The Tacoma Sportsmen's Club

16409 Canyon Road East

Puyallup, WA

August 15: Saturday 9 am — 5 pm

Shelton Rock and Mineral Society,

11th Annual Tailgate Rock Sale and Swap Meet

MCRA

2100 E Johns Prairie Rd

Shelton, WA

Tumble Polishing Jewelry by Barrie Edwards

This method of polishing jewelry involves a burnishing effect caused by the tumbling action of polished steel shot with your jewelry pieces, bringing them to a dazzling sparkle. The major benefits are:

1. No dust & particles flying around the room.

2. No half-polished pieces flying around the room!

3. No burned, blackened fingers.

4. And most importantly, requires none of your valuable time. You can sleep through the whole process if you want!

The only drawback I can figure is that you can't quite get a "mirror" finish on very large, flat surfaces. This would need a little machine buffing after the tumbling, but not nearly what you would normally have to do!

You will need the following equipment:

rotary tumbler traditionally used for rock polishing (I use a Lortone 3A tumbler)

enough polished steel shot to fill the barrel half full

soap! I use Ivory bar soap (grated). You can use a liquid soap, but make sure it is "99 44/100% pure soap"

NOT detergent!! Check the label of your soap carefully to make sure it is not a detergent you are using. Also, most jewelry suppliers carry a burnishing compound that would also work. **Note that many people use Dawn Dish Soap in their tumblers as burnishing compound. Formulas are not the same in each country or even in each color! I have read that the blue is the best, however I've always used Ivory bar soap, and given the extra protection that the tallow in the soap gives the silver (it takes AGES for my silver jewelry to tarnish compared to tumbling with anything else!), I'm sticking to it. Your mileage may vary!

It's very important that you make sure the piece you are going to tumble is sanded (using emery paper or boards) as smooth as possible - just as if you were about to take it to the buffing machine. If you take extra care at this point, making sure you've removed any file marks and heavy scratches, you will save lots of time after it's polished. Tumbling with steel shot will NOT remove scratches and imperfections, it will just make them shiny!

Now, put the shot in the tumbler barrel. Fill with enough water to cover the shot by about 3/4 of an inch. Add one tablespoon of soap (I use an old cheese grater to shave the soap). Put your jewelry in the barrel, put the lid on tightly, plug the machine in, and then put the barrel on the machine. Leave it to rotate for 6 to 8 hours (I usually put the tumbler on just before going to bed). Remove the barrel from the tumbler, then remove the pieces from the barrel. Rinse very well with running water. That's it, you're done!! Now you can set your stones, if there are any, and you have a beautifully polished piece of jewelry.

A note about putting the lid on the barrel – do NOT overtighten the top screw. The inner lid (that's the round flat part that has a rubber gasket over it and a screw sticking up) is made of thin aluminum. When you put the top lid on over the inner lid and start screwing the knob tight, the inner lid starts to flex just a little. Tighten a little and you create a good seal. If you tighten the knob too tight, the flex in the inner lid won't seal properly and the barrel lids will pop open during the tumbling process, letting all your soap, water, shot and jewelry free to make one heck of a mess that you get to clean up. If this happens, it's not the end of the world (which is why we never put our tumblers over top of anything that will be harmed by a water leak!). Gather up all the messy stuff, rinse everything off really well and start over. You can use a magnet to collect the steel shot off the floor and from other nooks and crannies. To make sure you're not over-tightening the lid, screw the knob on finger tight (don't use all the strength you own!), then back it off just a smidge. If you're worried you have it too tight, put the whole tumbler assembly in a large Rubbermaid container or clean plastic litter box. That will contain the mess until you're confident that you have the lid tightening process down pat!

At some point you may find that your silver looks dull and gray after tumbling for a length of time. This is the barrel breaking in – it doesn't usually happen right away but after a few tumbling sessions. If it should happen, remove your jewelry, rinse the shot well and return the shot to the barrel. Add enough FLAT Coke to cover the shot by about 1/2 an inch. Flat Coke is important so that it doesn't fizz out of control and pop your lid! Tumble with flat Coke for a couple of hours, rinse everything well, then put the shot back in the barrel with soap, tumble for a few hours. At this point, rinse one more time, add fresh soap, throw your sad looking jewelry back in with the shot and tumble for a few hours. It should come out shiny and pretty after all that. If not, repeat the procedure. It can take 2 or 3 runs with Coke to clean the barrel sufficiently.

from Pick & Shovel, 2/20